What is claimed is:

1. A switch network, comprising:

a plurality of switch chassis having a plurality of ports capable of functioning as input ports, destination ports or interconnect ports;

data connections for connecting some of the ports of the chassis as interconnect ports between chassis, and other ports as input or destination ports for data to be transmitted through the switch network;

each switch chassis having a space division switch capable of selectively interconnecting selected ones of its ports for data transfer;

each switch chassis having a time division switch for selectively transmitting data frames or packets between selected ones of its ports;

each of said ports having address decode logic operative in response to receipt of a frame of data at the port to decode an address portion of said frame;

said ports operative in response to the address for a data frame for time division switching to transmit the frame on said time division switch to a destination port on the receiving chassis or to an interconnect port for a destination port on a chassis different from the receiving port chassis based on the destination address of the frame;

said ports operative in response to a frame requesting a space division switch connection to transmit the frame on said time division switch to a destination port for the requested space division switch connection on the receiving chassis or to an interconnect port for a destination port on a chassis different from the receiving port chassis based on the request address of the frame; and

said ports operative in response to the transmission of the space division switch request frame through the switch network to cause the space division switch of the receiving, destination and any interconnect chassis to establish a space connection between the receiving and destination ports for the transmission of data.

2.   A network according to claim 1 wherein two substantially identical switch chassis are connected in a two-stage topology, with one or more of their ports connecting to each other as the second stage interconnect ports, and with of the ports of the two chassis connectable as first stage input/destination ports.

3.   A network according to claim 1 wherein three substantially identical switch chassis are connected in a three-stage topology, with a plurality of the ports of two of the chassis connectable as first stage input/destination ports, wherein said two chassis have one or more ports connected as stage two interconnect ports to interconnect ports on the third of said chassis which operate as the stage three interconnect ports.

4.   A network according to claim 1 wherein a plurality of substantially identical switch chassis are connected in a five-stage topology, wherein:

with a number of chassis have a plurality of ports connectable as first stage input/destination ports, and at least one port connected as a stage two interconnect port;

a number of said chassis connected with two or more ports connected as stage three interconnect ports to the stage two interconnect ports, and having at least one of their ports connected as stage four interconnect ports; and

at least one of said chassis having a plurality of ports connected as stage five interconnect ports connected to the stage four interconnect ports.

5.   A switch network for handling Fibre Channel data, comprising:

a plurality of switch chassis having a plurality of ports capable of functioning as N_Ports or E_Ports;

data connections for connecting some of the ports of the chassis as E_ports for interconnection between chassis, and other ports as N_Port input and/or destination ports for data to be transmitted through the switch network;

each switch chassis having a connection switch capable of selectively interconnecting selected ones of its ports for Class 1 data transfer;

each switch chassis having a connectionless switch for selectively transmitting Class 2 or 3 data frames between selected ones of its ports;

each of said ports having address decode logic operative in response to receipt of a frame of data at the port to decode an address portion of said frame;

said ports operative in response to the address for a data frame for connectionless switching to transmit the frame on said connectionless switch to a destination port on the receiving chassis or to an interconnect port for a destination port on a chassis different from the receiving port chassis based on the destination address of the frame;

said ports operative in response to a frame requesting a Class 1 connection to transmit the request frame on said t connectionless switch to a destination port for the requested Class 1 connection on the receiving chassis or to an interconnect port for a destination port on a chassis different from the receiving port chassis based on the request address of the frame; and

said ports operative in response to the transmission of the Class 1 request frame through the switch network to cause the connection switch of the receiving, destination and any interconnect chassis to establish a Class 1 data connection between the receiving and destination ports for the transmission of data.

6.   A switch network according to claim 5, wherein at least some of the ports of the chassis are capable of functioning as FL_Ports when connected to a loop.

7.   A network according to claim 5 wherein two substantially identical switch chassis are connected in a two-stage topology, with one or more of their ports connecting to each other as the second stage interconnect E_Ports, and with of the ports of the two chassis connectable as first stage input/destination N_Ports.

8. A network according to claim 5 wherein three substantially identical switch chassis are connected in a three-stage topology, with a plurality of the ports of two of the chassis connectable as first stage input/destination N_Ports., wherein said two chassis have one or more ports connected as stage two interconnect E_Ports to interconnect E_Ports on the third of said chassis which operate as the stage three interconnect ports.

9. A network according to claim 5 wherein a plurality of substantially identical switch chassis are connected in a five-stage topology, wherein:

with a number of chassis have a plurality of ports connectable as first stage input/destination N_Ports, and at least one port connected as a stage two interconnect E_Port;

a number of said chassis connected with two or more ports connected as stage three interconnect E_Ports to the stage two interconnect E_Ports, and having at least one of their ports connected as stage four interconnect E_Ports; and

at least one of said chassis having a plurality of ports connected as stage five interconnect E_Ports connected to the stage four interconnect E_Ports.

10. A switch chassis for providing selective data communication between lines or devices connectable thereto, comprising:

a plurality of ports capable of functioning as input ports, destination ports or interconnect ports for connection to another of such chassis;

a space division switch capable of selectively interconnecting selected ones of its ports for data transfer;

a time division switch for selectively transmitting data frames or packets between selected ones of its ports;

each of said ports having address decode logic operative in response to receipt of a frame of data at the port to decode an address portion of said frame;

said ports operative in response to the address for a data frame for time division switching to transmit the frame on said time division switch to a destination port on the receiving chassis or to an interconnect port for a destination port not on the chassis based on the destination address of the frame;

said ports operative in response to a frame requesting a space division switch connection to transmit the frame on said time division switch to a destination port for the requested space division switch connection on the chassis or to an interconnect port for a destination port not on the chassis based on the request address of the frame; and

said ports operative in response to the transmission of the space division switch request frame through the switch chassis to its destination to cause the space division switch of the chassis to establish a space connection between the input and destination or interconnection ports for the transmission of data.

11.   A switch chassis according to claim 10 wherein at least some of the ports of the chassis are capable of functioning as controller when connected to a loop of addressable devices.

12.   A switch network comprising a plurality of the switch chassis of claim 10 connected together by their interconnected by their interconnect ports.

13.   A switch chassis for handling Fibre Channel data, comprising:
        a plurality of ports capable of functioning as N_Ports or E_Ports;
        a connection switch capable of selectively interconnecting selected ones of its ports for Class 1 data transfer;
        a connectionless switch for selectively transmitting Class 2 or 3 data frames between selected ones of its ports;
        each of said ports having address decode logic operative in response to receipt of a frame of data at the port to decode an address portion of said frame;

said ports operative in response to the address for a data frame for connectionless switching to transmit the frame on said connectionless switch to a destination port on the chassis or to an interconnect E_Port for a destination port not on the chassis based on the destination address of the frame;

said ports operative in response to a frame requesting a Class 1 connection to transmit the request frame on said connectionless switch to a destination port for the requested Class 1 connection on the chassis or to an interconnect E_Port for a destination port not on the chassis based on the request address of the frame; and

said ports operative in response to the transmission of the Class 1 request frame through the switch chassis to its destination to cause the connection switch to establish a Class 1 connection between the input and destination or interconnection ports for the transmission of data.

14.   A switch chassis according to claim 13 wherein at least some of the ports of the chassis are capable of functioning as FL_Ports when connected to a Fibre Channel arbitrated loop.

15.   A switch network comprising a plurality of the switch chassis of claim 13 connected together by their interconnected by their interconnect E_Ports.

16.   A switch network according to claim 15 further including a programmed controller connected in communication with the ports and operative in a topology discovery mode to determine the type of Fibre Channel port each will be functioning as according to the network connection.

17.   A switch network according to claim 16 wherein said ports are programmable by said programmed controller according to the port's topological address in the switch network.

18.   A switch network according to claim 17 wherein the port address decoder logic selects destination paths based on said programmed topological addresses.